

REMARKS

Applicant has carefully reviewed and considered the office action dated October 19, 2004 and the references cited therewith. Claim 29 has been amended to correct a typographical error. Claims 1-45 are pending in the application and presently stand rejected under 35 U.S.C. § 103(a). All the rejections are traversed and reconsideration is respectfully requested.

Information Disclosure Statement

Applicant submitted a Supplemental Information Disclosure Statement and a 1449 Form on March 12, 2002 and May 24, 2002. Applicant respectfully requests that initialed copies of the 1449 Forms be returned to Applicants' Representatives to indicate that the cited references have been considered by the Examiner.

Rejections Under 35 U.S.C. § 103

In the Office Action, claims 1-45 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sakaguchi (U.S. Patent No. 6,310,627). The specific grounds of rejection stated in the office action are addressed in turn below.

Claims 1 and 38

In rejecting claims 1 and 38, the office action asserts that Sakaguchi teaches all of the limitations recited by claims 1 and 38 except for “the shell defined around the mannequin.” The office action then goes on to assert that Sakaguchi suggests this limitation because “Sakaguchi teaches the shape of the garment as fitted into the shape of the human model wherein the shape of the human model is the shell defined around the mannequin.” The office action then states that it would have been obvious to incorporate the shell defined around the mannequin since doing so would enable a precise definition of the shape of the human model.

As set forth in the specification, the shells defined around the mannequin are three-dimensional constructs which are added to the rendering frame and act as surrogates for other garments in order to allow composite images of multiple garments to be rendered from separate rendering frames each containing only one garment. A particular version of a garment is defined

to be combinable with one or more other particular garments and is rendered from a rendering frame in which the garment is constrained to reside within or outside of particular predefined shells around the mannequin. The constraining shells serve to mimic the collisions with another garment that would take place were a simulation to be performed with that other garment. This allows a plurality of different versions of each garment image to be created and stored in a repository so that multiple garment images can be layered on a two-dimensional rendering of a mannequin, with the garments being rendered from rendering frames in an independent manner. Creating versions of garments at the level of the three-dimensional rendering frame, instead of in the two-dimensional garment image itself, permits large numbers of viewing perspective renderings to be generated from a single version rendering frame in a consistent manner.

The office action's argument as quoted above is essentially that the shell defined around the mannequin as recited by applicant's claims could conform to the exact dimensions of the mannequin. That, however, is not a shell but is simply a mannequin. Applicant has positively recited in claims 1 and 38 the limitation of "constraining portions of the garment to reside within or outside of particular shells defined around the mannequin in the rendering frame" and believes it is clear that, read in light of the specification, a shell must be a separate thing from the mannequin. Applicant finds no teaching or suggestion in Sakaguchi or the other prior art of record for the use of such shells. Applicant therefore respectfully submits that claims 1, 19, 29, 33, and 38 which recite a limitation dealing with constraining shells, as well as the claims depending therefrom, are patentable over the prior art of record.

Claims 2, 35, and 43

With respect to claims 2, 35, and 43, the office action states that Sakaguchi discloses the rendered image is used to form a visual image on a computer display device. Claim 2 recites forming a visual image on a computer display device as an additional limitation to those recited by claim 1 and therefore recites patentable subject matter in that context. The office action does not appear to address the specific limitations recited by claims 35 and 43.

Claims 3-4, 6-9, 13, 30-31, 33, and 36

With respect to claims 3-4, 6-9, 13, 30-31, 33, and 36, the office action states that Sakaguchi teaches generating rendering frames containing mannequin or garment objects as defined by selected parameter values by shape blending corresponding objects of previously generated rendering frames. Shape blending, as the term is used in the present application and as commonly understood in the computer graphics field, refers to a function that, given a source and a destination 3D object, computes a new 3D object whose shape is in between the source and the destination object. As an example, given a 3D model of a small body and a 3D model of big body, the blend shaping function will create a new body shape of medium size. In the present context, shape blending techniques are used to modify the mannequin and/or garment 3D polygonal structure to desired selected parameter values by interpolating between the corresponding 3D polygonal structure parameter values of previously generated mannequin and/or garments, referred to as reference rendering frames. Garment and/or mannequin parameter values corresponding to the desired changes are modified within a reference rendering frame, and a partial further simulation is performed that creates a new rendering frame containing the changed mannequin and/or garment. The parameters are thus keyframed within the simulation sequence, where keyframing refers to assigning values to specific garment or mannequin parameters in a simulation scene and generating a new frame using a linear combination of those parameter values and parameter values generated from a previous simulation. In this way, previously generated rendering frames are leveraged to produce new rendering frames with different garment and/or mannequin dimensions without the necessity of performing a complete draping and collision simulation. The cited portions of Sakaguchi dealing with animating a three-dimensional object consisting of the human model and the garment do not appear to applicant to be related to shape blending. Applicant therefore maintains that claims 3, 16, and 32 which recite subject matter relating to shape blending, as well as the claims depending therefrom, are patentable over the prior art of record.

Claims 5, 23, 42, and 45

With respect to claims 5, 23, 42, and 45, the office action states that Sakaguchi discloses the two-dimensional images are rendered from a rendering frame using a plurality of camera positions. Claims 5 and 23 recite rendering two-dimensional images from a rendering frame using a plurality of camera positions as an additional limitation to those recited by claims 1 and 19, respectively, and therefore recite patentable subject matter in that context. Claims 42 and 45 recite that the plurality of two-dimensional garment and mannequin images in a repository are rendered from a plurality of selectable camera angles, the repository of two-dimensional images being recited by claims 34 and 44 from which claims 42 and 45 depend. Applicant finds nothing in Sakaguchi which relates to a repository of two-dimensional images which can be combined to form a composite two-dimensional image of user-selected garments and of a selected mannequin as recited by claims 42 and 45.

Claims 10-12 and 39

With respect to claims 10-12 and 39, the office action states that “Sakaguchi discloses the separate rendering frames are combined into a composite two-dimensional image using Z-coordinates of the objects.” Claim 10 recites that separate rendering frames are combined into a composite two-dimensional image using Z-coordinates of the objects as an additional limitation to those recited by claim 1 and therefore recites patentable subject matter in that context. The office action does not appear to address the specific limitations recited by claims 11-12 and 39.

Claims 14-15

With respect to claims 14-15, the Office Action states that Sakaguchi discloses a network and processor-executable instructions. Claims 14 and 15 recite additional limitations to the limitations recited by claim 1 and are asserted to recite patentable matter in that context.

Claims 16, 19, 29, and 32

Regarding claims 16, 19, 29, and 32, the office action states that the limitations of claims 16, 19, 29, and 32 are analyzed as discussed with respect to claim 1 above except for generating rendering frames containing mannequin or garment objects as defined by selected parameter

values by shape blending corresponding objects of previously generated rendering frames.

Claims 19 and 29 recite subject matter relating to shells defined around the mannequin which, as discussed above, is asserted to be patentable over the prior art of record. Claims 16 and 32 recite subject matter relating to shape blending which, as discussed above, is asserted to be patentable over the prior art of record.

Claims 17-18, 20-22, 24-28, 37, and 40-41

Regarding claims 17-18, 20-22, 24-28, 37, and 40-41, the office action states that Sakaguchi discloses a plurality of garment panels that are connected together during the draping and collision simulation and further wherein the garment parameters include the normal lines of the surface of the garment. This statement is only relevant to claims 17 and 25 which recite an additional limitation relating to garment panels to the subject matters recited by claims 16 and 19, respectively, and are therefore asserted to recited patentable subject matter in that context. The office action does not address the subject matters recited by claims 18, 20-22, 24, 26-28, and 40-41.

Claims 34 and 44

Claims 34 recites a repository containing a plurality of two-dimensional garment images and mannequin images as defined by specific parameters, and a compositing rule interpreter for displaying the two-dimensional images of user-selected garments and of a selected mannequin in a layered order dictated by compositing rules. Claim 44 recites a repository containing a plurality of two-dimensional garment images and mannequin images as defined by specific parameters, wherein the images contained in the repository are created by rendering an image from a three-dimensional simulation scene containing a mannequin wearing the garment, and a means for displaying the two-dimensional images of user-selected garments and of a selected mannequin in a layered order determined from depth information contained in the simulation scene. Applicant finds no teaching or suggestion for the limitations recited by either claim 34 or 44 in Sakaguchi.

Timely Traversal of Assertions of Things Known to One of Skill in the Art

Applicant generally traverses the assertion of things "known to one of skill in the art" as a form of Official Notice and requests a reference to support such assertions pursuant to MPEP 2144.03, or their withdrawal in the next official communication.

Conclusion

In view of the foregoing remarks, Applicant believes the claims are in condition, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (847) 432-7302 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 22 day of February, 2005.

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Signature